REMARKS

By this Amendment, claims 4, 6 and 14 are amended to merely clarify the recited subject matter. Claims 1-16 are pending.

Applicants acknowledge the indication that claims 6-8 and 14-16 contain allowable subject matter. However, Applicants delay rewriting those claims in independent format at this time to afford the Office the opportunity to fully reconsider the patentability of the rejected base claims.

Claims 4, 6-8 and 14-16 were rejected under 35 U.S.C. 112, second paragraph, for alleged indefiniteness. Applicants submit that claims, as amended, fully comply with the requirements of 112.

Claims 1-2, 5, 9, 10 and 13 were rejected under 35 U.S.C. 103(a) based on Reilly (U.S. 5,953,668) and Budka et al. (U.S. 6,330,288; hereafter "Budka"). Claims 3 and 11 were rejected under 35 U.S.C. 103(a) based on Reilly, Budka and Hjelm et al. (U.S. 5,978,368; hereafter "Hjelm"). Claims 4 and 12 were rejected under 35 U.S.C. 103(a) based on Reilly, Budka and Malmgren et al. (U.S. 6,334,057; hereafter "Malmgren").

Applicants traverse the rejections because the cited references, analyzed individually or in combination, fail to disclose, teach or suggest the claimed subject matter. Moreover, one of ordinary skill in the art would not have combined the cited prior art as hypothesized by the Office Action.

REFERENCES FAIL TO TEACH OR SUGGEST ALL CLAIM FEATURES

For example, the cited prior art fails to disclose, teach or suggest the claimed method of allocating Abis interface transmission channels in a packet cellular radio network, comprising "allocating dynamically, using in-band signalling, a necessary number of transmission channels to packet data transfer, the amount of packet data varying according to the modulation and coding scheme used on a Um interface," as recited in independent claim 1 and its dependent claims. Similarly, the cited prior art fails to disclose, teach or suggest the claimed network part of a packet cellular radio network, comprising a packet control unit communicating with the channel codec unit through an Abis interface "wherein the packet control unit, using in-band signalling, dynamically allocates on the Abis interface a necessary number of transmission channels to packet data transfer, the amount of packet data varying according to the modulation and coding scheme used on the Um interface," as recited in independent claim 9 and its dependent claims.

Reilly merely discloses a Base Transceiver System (BTS), i.e., a base station, as illustrated in Fig. 3, that utilizes a Time Division Multiplex (TDM) bus (controlled by a bus controller 55) connecting a wideband multichannel receiver 43 to Digital Signal Processor (DSP) demodulators 44-1, 44-2, ..., 44-P and a wideband multichannel transmitter 49 to DSP modulators 48-1, 48-2, ..., 48-P. A transceiver control processor 50 is also connected to the TDM bus. A channel management process thus maintains a mapping between the radio interface channels (Um) and Abis traffic channels, through the use of the TDM bus (see, Fig. 3 and column 5 line 21 - column 6 line 49).

Accordingly, Reilly's text at column 2 line 56 - column 3 line 6 merely discloses that an allocable mapping may be made between air interface channels (Um) and landline interface traffic channels (Abis) by the base station, which reduces the traffic between the BSC (Base Station Controller) and BTS. The phrase "allocable mapping," however, does not refer to the allocation of transmission channels; rather, that phrase merely refers to the fact that there is an allocable, or allocated, mapping of Um and Abis channels. Accordingly, there is some distributed relationship between the UM and Abis channels. However, Reilly fails to teach or suggest anything about the actual transmission channels. Accordingly, one of ordinary skill in the art would have assumed that Reilly merely utilizes fixed allocation of transmission channels for actual transmission.

Therefore, Reilly's configuration is very different from the present invention, wherein a necessary number of transmission channels for packet data transfer is dynamically allocated between the base station controller BSC and the base station BTS to provide a way of optimizing the use of actual transmission resources between the BSC and BTS on the Abis interface.

Budka fails to remedy the deficiencies of Reilly because Budka merely discloses that a coding/modulation scheme may be selected from k available coding/modulation schemes such that the selected coding/modulation scheme will transmit the data D using the maximum available protection for a given measured C/I and data D. Again, this configuration is very different from the present invention, where the necessary number of transmission channels on the Abis interface is allocated dynamically according to the modulation and coding scheme used on the Um interface.

Thus, neither Reilly or Budka discloses, teaches or suggests optimization of the transmission channels usage (with dynamic, in-band signalling) on the Abis interface according to the modulation and coding scheme used on the Um interface. Rather, a system

resulting from the combined teachings of Reilly and Budka would likely include a base station capable of performing a mapping between air interface channels (Um) and landline interface traffic channels (Abis); that base station would also be capable of optimizing the air interface channel (Um) usage by selecting a coding/modulation scheme that will transmit the data D using the maximum available protection for a given measured C/I and data D.

Hjelm fails to remedy the deficiencies of Reilly and Budka because Hjelm merely teaches a control node and a base station node, wherein the control node maintains a first list of idle radio channels which is consulted in order to obtain channels for a first type of telecommunications service and a second list of idle radio channels is maintained for a specialized telecommunications service, the idle radio channels of the second list being radio channels which are unallocated with respect to the specialized telecommunications service but yet activated (e.g., having an established transmission path and synchronization). The second list of idle radio channels is initially consulted in order to obtain channels for the specialized telecommunications service. If no channels are available for the specialized telecommunications service on the second list, idle channels from the first list are adapted and utilized for the specialized telecommunications service. The specialized telecommunications service preferably involves packet data transfer (e.g., GPRS).

Similarly, Malmgren fails to remedy the deficiencies of Reilly, Budka and Hjelm because Malmgren merely teaches a technique for assigning (i.e., allocating) uplink and downlink radio channels in a TDD-TDMA based network by determining the level of susceptibility associated with each mobile unit during both the uplink and downlink period. The mobile unit is then assigned a radio channel in either or both the uplink and downlink traffic channel fields as a function of these determinations.

Thus, the cited prior art, analyzed individually or in combination, fails to disclose, teach or suggest the claimed dynamic allocation, using in-band signalling, of a necessary number of transmission channels to packet data transfer, the amount of packet data varying according to the modulation and coding scheme used on a Um interface.

INADEQUATE MOTIVATION TO COMBINE REFERENCES

Moreover, Applicants traverse the rejections because the Office Action has failed to establish a prima facie case of obviousness in that there is inadequate motivation to combine the teachings of Reilly and Budka in the manner hypothesized by the Office Action. Rather, the identified motivation to combine the teachings of Reilly and Budka is improperly based

on hindsight analysis by selectively hand-picking an illogical combination of features from the teachings of Reilly and Budka, with no reasonable basis for the selection except Applicants' own teachings. Specifically, the Office Action asserted that one of ordinary skill in the art would have been motivated by Budka to utilize the teachings of Budka to select the strongest coding and modulation scheme in Budka to improve throughput. However, this recitation of motivation is nothing more then a hypothetical statement of potential result. Moreover, the Office Action's assertions that Reilly and Budka are combinable is irrelevant. Such statements are insufficient to support an obviousness type rejection. There must be explicit teaching or suggestion of the advisability of modifying or combining reference teachings. The mere fact that references could be combined in some illogical manner is insufficient to support an obviousness rejection. Therefore, all of the prior art rejections based on a combination of Reilly and Budka, alone or with other references, are traversed for lack of motivation to combine.

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below. All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
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